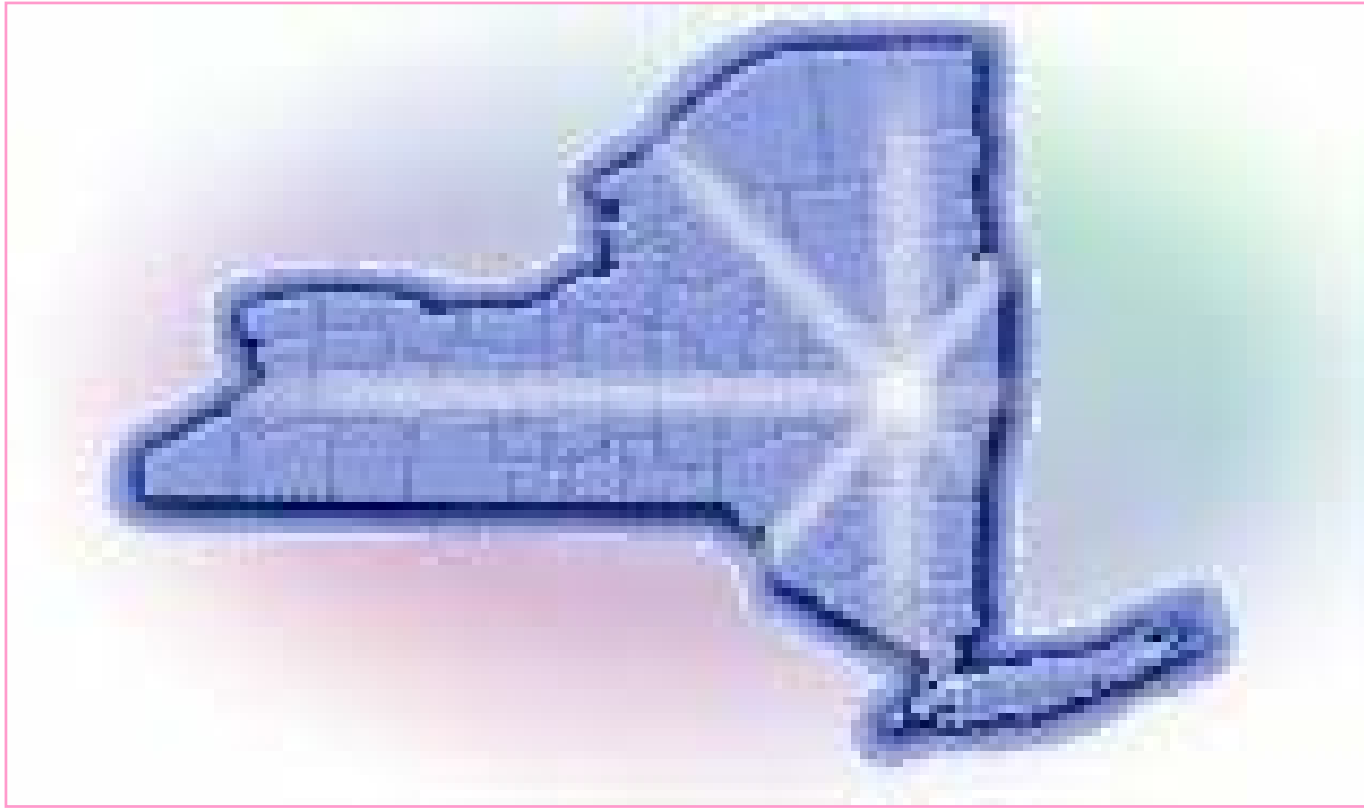


NY State Health Commerce System



**Essential Building Blocks for National
Integrated Health Information Systems, Public Health
Preparedness, Planning, **Communications**, Response
and Recovery**

NYSDOH Enterprise-wide Health Commerce System Domains

Health Facilities/Providers/Other

- **Hospitals – 250 (all)**
- **Nursing Homes – 690 (All)**
- **Home Health/Personal Care – 600**
- **Diagnostic & Treatment Ctrs. – 500**
- **Physicians (20-30K in process)**
- **Managed Care Orgs. (70)**
- **Other**
 - **Clinical & Env. Labs –1805**
 - **Pharmacies 200**
 - **PHP Ag. And Markets, EMS**
 - **Env. Conservation**

Local Public Health

**All
County Health Depts. – 57
NY City DOH**

**NYSDOH
Health
Alert Network**

**22,000 accounts
8,000 Organizations
2,800 User logins /day
450,000 access hits/day
100 mission critical Applications**

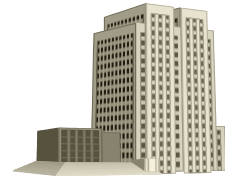
HEALTH COMMERCE Architecture



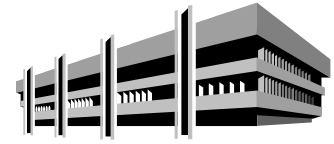
Health providers,
Response partners,
Agencies



Local Health
Departments



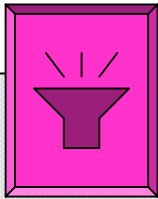
Health
facilities



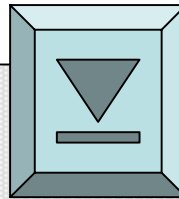
Clinical Labs

Automated live exchange
Clinical data
Alerts
Other State/Federal Systems

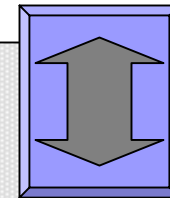
! Alerting



Secure Web Access



Secure Automated
Messaging (NHII/PHIN)



Disease
Surveillance Lab
Reporting

HERDS

Other Commerce
Information
Systems

Communications
Directory

Integrated
Notification
System

Secure
Discussion
Forum

Data Visualization
& Analysis
GIS

Integrated Data
Repositories

Spatial Data
Warehouse

SECURITY, Availability, Continuity



Communications Directory

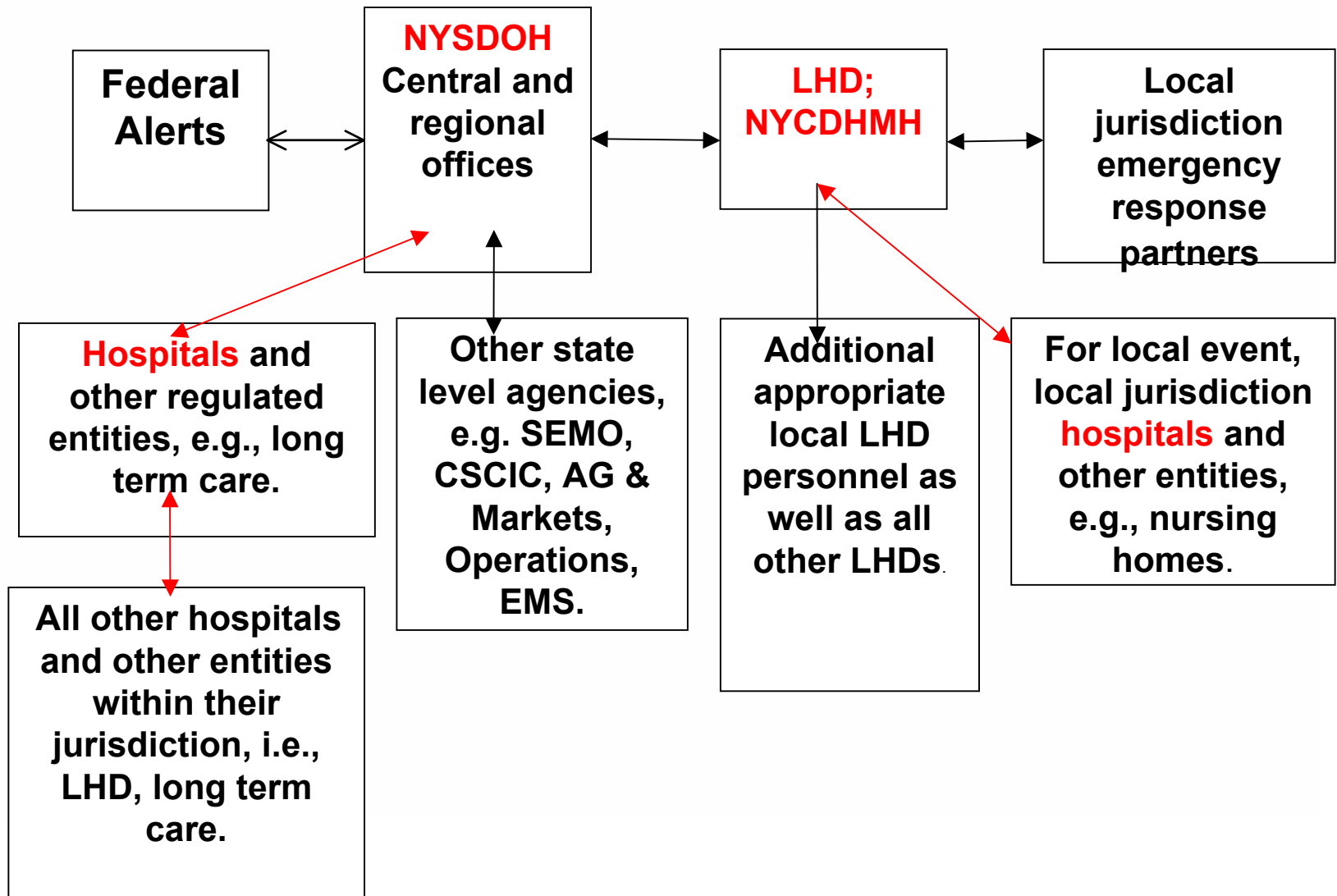
- Contact types:
 - Non-person (Location)
 - person role
 - person prioritizes contacts & types of contact information
- Roles customized to organization type
- Decentralized maintenance of contact and account information by external partners
 - Coordinators (roles in ComDir)
 - Individuals
- Tools:
 - Access controlled Coordinator tools
 - Monitor accounts, request accounts
 - Role assignment (contact and access)
 - Update role/contact information (name searches, etc.)
 - Bulk routine messaging
 - List creation
 - Administration
 - Role creation
 - Role based access assignment
 - Role reports
 - Update 'nags'

Integrated Notification System (INS)

- Delivery modes and urgency
 - determined by Level of Notification(Alerts, High Advisory, Advisory, Updates, Informational)
- Multi-modes of contact
 - phone, cell, pager, fax, email, Secure web posting
 - de-duplication of call out
 - Target alerts by roll, individual, location,organization
- Compliant (architecture) and compatible(concepts) with CDC/State Alerts and Communications Workgroup
 - Cascading PHIN Alerting System (PHINMS transport)
 - Common Alerting Protocol architecture and vocabulary concepts
- Verification of receipt
 - Tabular and GIS reports(in process) to track receipt of alert by roles/mode of contact
- Text to speech and prerecorded message creation
- Notification creation interfaces
 - web-based
 - Generalized model for automated application based alerts (XML schema)
 - PHINMS -
 - Applications (HERDS, ECLRS)
 - Phone (IVR) in process
 - Access and use (shared: State, Local Health, Clinical community)
 - Role and jurisdiction based access control for use of system and sending of alerts
- IVR technology for NYSDOH Duty Officer System and Call centers



NYSDOH Cascading Notification Flow

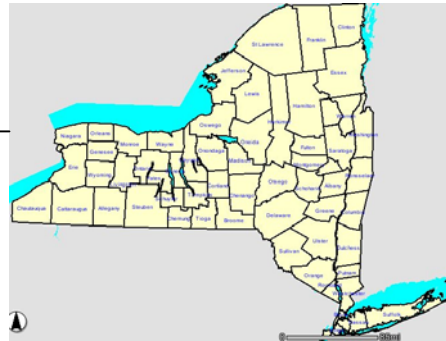


**Jurisdictional,
role and
Organizational
type Contact
Protocols for
Notifications
and bulk
messaging**

**Vertical hierarchy across geographic
jurisdiction**

Horizontal hierarchy across like-type organization entities

**Across
all
jurisdictions**



**Emergency
notifications and
bulk messaging
across all
organization types.**

State DOH staff

**Across
all county
jurisdictions
in their
region**



**Emergency
notifications and
bulk messaging
to all other regional
offices; to all other
type organizations
within their region.**

State Regional Office Staff

**Across
only their
county**



**Emergency
notifications and
bulk messaging
to all other local
health depts; to
all other type
organizations within
their county**

Local Health Depts.

**Notification
Urgency Level
Contact Protocols**



**DOH,
Regional &
County DOH
and hospital
designated
officials**

**Content Access
Restricted to HAN website**

Commerce
Website

Alerts

Immediate
Action Needed
24x7 Contact

High Advisories

Immediate
Awareness Needed
7:00 a.m. – 11:00 p.m.

Advisories

Important but no
immediate
Action Needed
Business hours and
Passive after hours

**Updates to Alert
or Advisory**

**Informational
messages**

Business hours only



Cell/ Office/
Home Phones



Pagers



Fax



Blackberry (internal
DOH only)



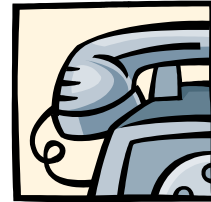
Email



Email



Fax



If circumstances warrant it,
may also use
Office phone only



Email

Fax



Metrics

- Use/Testing/metrics (reports, templates and standard announcement protocols)
 - Drills Bi-weekly systematically testing each contact mode and varying roles contacted
 - HERDS activation
 - HealthAlerts

IHANS Alerting Metrics

Health Facilities (HERDS Activation)

- **HERDS**
 - Dynamic system for electronic incidents/surveillance
 - Data workflow exchange between clinical, local and state health
 - Activation accompanied by automated alerting
 - Response time metric: roles health facilities receive alert, access NYSDOH commerce, enter information into HERDS.
 - Statewide activations for preparedness
 - Drills

Health Facilities

Examples: Unannounced statewide HERDS activation for preparedness

- **Hurricane Isabel**
 - Activation Alert sent: 09/16/03, 12:51 PM
 - Time given to respond 24 hrs.
 - 92% (225/245) hospitals respond in 24 hrs.
- **Threat Level Orange.**
 - Activation Alert sent: 12/30/03, 4:59 PM
 - Time given to respond 24 hrs.
 - 96% (238/245) hospitals respond in 24 hrs.

Local Health

Examples: Unannounced Alert Drills

- **Scenerio**
 - 5 key roles at local health sent notifications
 - acknowledge phone contact on phone keypad
 - Access NYSDOH HAN system
 - Complete electronic form with code-word
 - Time to respond

Local Health

Examples: Unannounced Alert Drills

- mid-Day (Office phones)
 - Activation Alert sent: 04/22/2004, 11:00 AM
 - Time given to respond 24 hrs. (response form closed)
 - 91% (53/58) LHDs respond in 1 hrs. (includes NYCity)
- Afternoon (Office phones)
 - Activation Alert sent: 04/08/2004, 4 PM
 - Time given to respond 24 hrs. (response form closed)
 - 84% (49/59) LHDs respond in 1 hrs.

Local Health

Examples: Unannounced Alert Drills

- After hours (Cell phones)
 - Activation Alert sent: 05/08/2004, 6:45 PM
 - Cell keypad response only
 - 95% (55/58) LHDs respond in 1 hrs. (includes NYCity)

Issues for Emergency Notifications

- Reliable 24/7 contact
 - Acculturation of recipients to carry devices and correctly respond to system
 - Manual confirmation of phone message by recipient
 - Reimbursement for personnel for 24/7 coverage
 - How to reconcile -- Which roles to contact?
Duty officer? Incident Command (Cascading Model)
 - Training needed for duty officers or 24/7 call desks for rapid dissemination of notifications to designated recipients
 - Drills to instill reliability/trust in process
 - -- Or --
 - Role specific?
 - Redundant contacts of both; no control over email delivery; variations in return receipt by organization
- Problems with cell phone coverage
- Idiosyncracies of IVR systems
 - Initial pause before messages
- Difficulty of automating callout to pagers –
 - timing variability among service providers
 - preliminary script written detects pickup by numeric pagers
- Confirmation of message receipt
 - Phone – recipients must be trained to follow voice prompt instructions for confirmation
 - Email and Fax – require manual confirmation/reply